

# Fifteen Years of Web Based Data Management at Tooele Army Depot

Suzan Hughes, Synectics | Pamela Wehrmann, USACE

Environmental Monitoring and Data Quality Workshop

March 28, 2012



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Sacramento District



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a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

# Where Were You in 1996?

The price of gas was \$1.25/gallon...

Minimum Wage was increased to \$5.15/hour...

The National Debt was a mere \$5.2 trillion...



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# Dolly the Sheep was Born...



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# Dallas Cowboys Won 5<sup>th</sup> Title...



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# Bill Clinton was Re-Elected...



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# The DVD was Launched...



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# An Online Auction Site was Launched...



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# And, Tooele Army Depot Goes Online



Following an EPA audit of nine federal facilities, Tooele Army Depot (TEAD) proactively begins the process of centralizing their environmental data



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# Tooele Army Depot History

- The Tooele Valley was originally inhabited by Early Desert Archaic Indians
- Installation established in 1942 as Tooele Ordnance Depot
- Storage depot for World War II supplies, ammunition, and combat vehicles



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# Tooele Army Depot History

Current mission is storage, maintenance and demilitarization of conventional ammunition



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# USACE Awards Data Management Contract

The Sacramento District contracted with Synectics to provide an innovative solution allowing TEAD stakeholders to access the same data the prime contractor was using, in real time:

- The Government would have control of their data
- Information would all be in one central repository
- Data quality would be significantly improved
- Documentation would be easily accessible



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# Implementation Approach

- Import historical data from various formats, from as early as 1982 into a web enabled database
- Create processes for interns to utilize automation to enter data from hardcopy
- Implement data screening and loading tools for current and future data generators
- Utilize existing technologies wherever possible



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# Right on Target: EPA Findings Published in 1997

“The primary goal of the QA program is to ensure that all environmentally related measurements...[laboratory analysis] produce data of known quality. The quality of data is known when all components...are thoroughly documented, such documentation being verifiable and defensible.”

-EPA Order 5360.1



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Tooele Army Depot

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## Tooele Army Depot

Recent Photos

Environmental Data

EMI	7,529
GWD	284,554
LDI	2,231
LTD	7,858
RESULT	403,762
SAMPLE	18,782
SLX	347
TEST	30,081
UXODISC	0
WCI	358
WINT	2,754
WMI	0

Approved Documents

Planning Documents	55
Final Reports	143
Decision Documents	14
Laboratory Reports	355
Field Logs	305
Data Review Reports	277
Quality Assurance	67
Miscellaneous	81
Public Meetings	5
System Management	5

Document Status

Loaded	340
Certified	8
Approved	1,414

Points of Contact

- Heather Stamps (Admin)
- Evin McKinney (Tech)

Active Users

- Betty Van Pelt
- Carl Cole
- Evin McKinney
- Hang Bui
- John Torgensen
- Larry McFarland
- Maryellen Mackenzie
- Neda Akhondan
- Pam Wehrmann
- Richard Jirik
- Suzan Hughes
- Ting Li

Project Calendar

March 2012

S	M	T	W	T	F	S
26	27	28	29	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
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Communications Log

Evin McKinney wrote:  
SELECT \* FROM  
LOOKUP.dbo.tlkpASTMCODE

Kenette Pimentel wrote:  
Okay, thank you.

Evin McKinney wrote:  
That is correct, but we need to add  
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Kenette Pimentel wrote:  
Hi Evin, do you know the project  
document for Parson's TEAD SWMU-58  
CMI? I am having vxl issues with our  
EDD. SWMU 58 Work Plan, Dec. 2003

powered by synectics ems

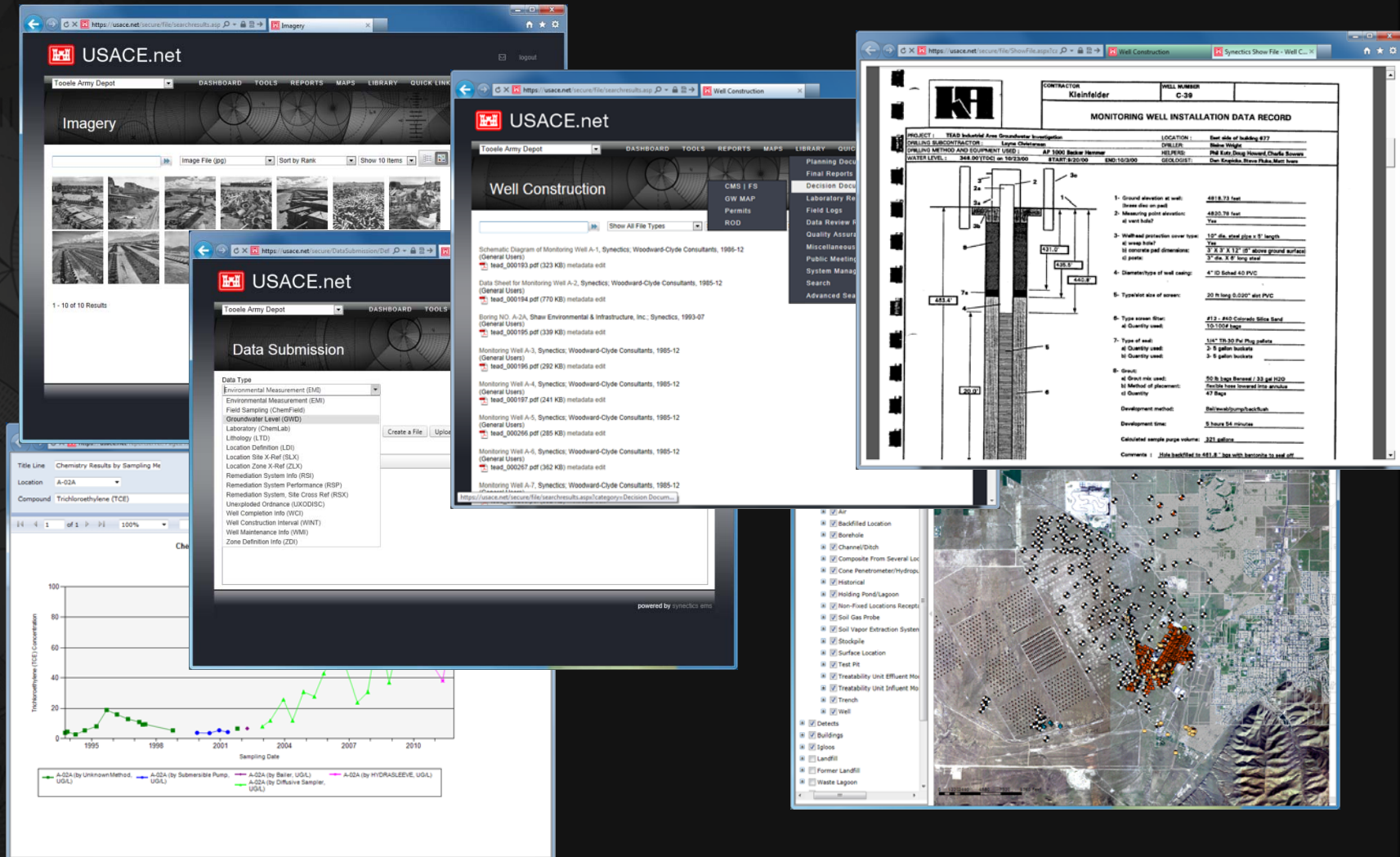


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# All the Data in One Place



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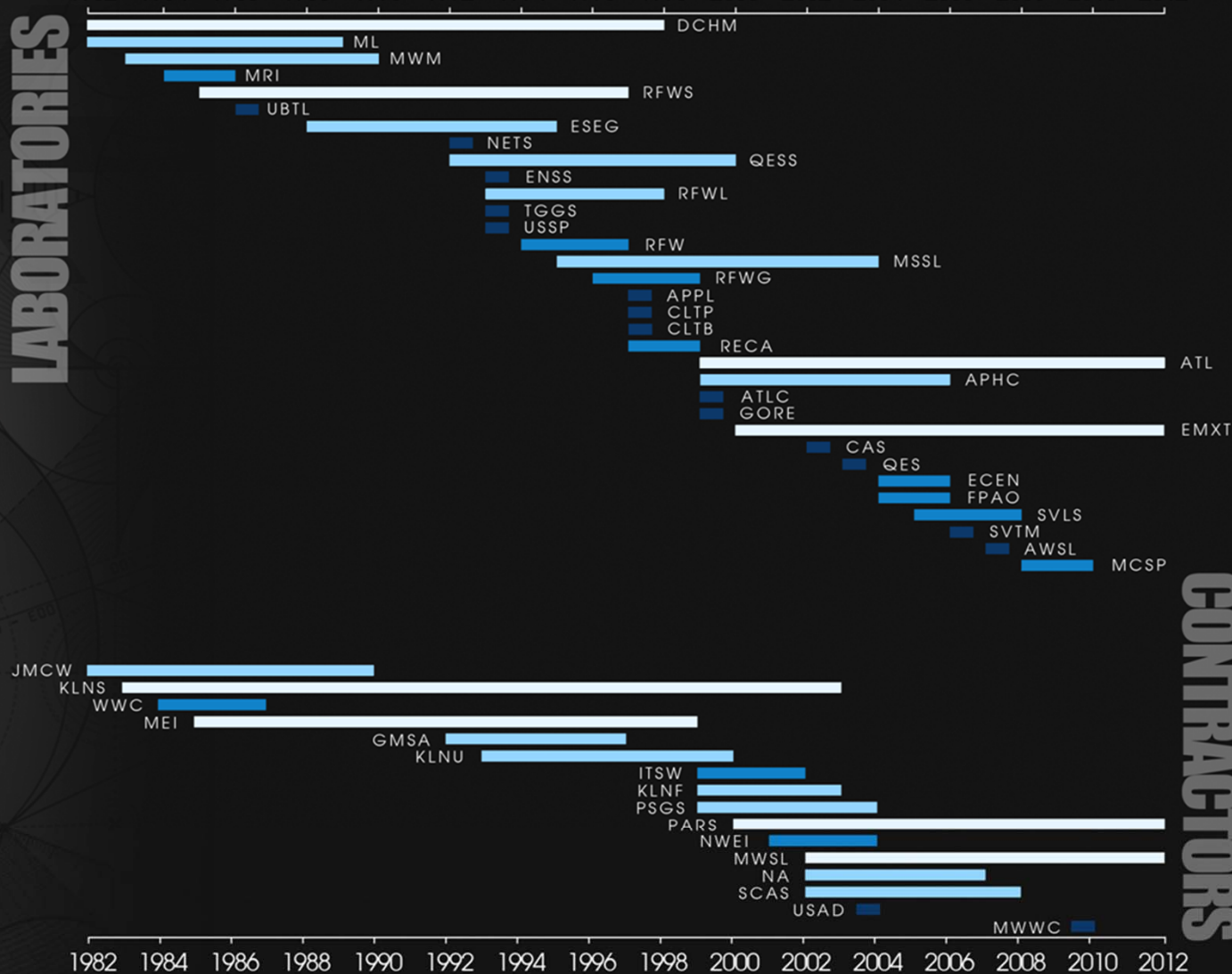
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# LABORATORIES

1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012

1 year  
2-3 years  
4-9 years  
10+ years



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# Laboratories & Contractors Legend

## Laboratories

APHC – Applied Physics & Chemistry Laboratory, Chino, CA  
APPL – Agriculture & Priority Pollutants  
ATL – Air Toxics, Ltd., Folsom, CA  
ATLC – Air Technology Labs, City of Industry, CA  
AWSL – American West Analytical Labs, Salt Lake City, UT  
CAS – Columbia Analytical Services, Inc. (CAS), Redding, CA  
CLTP – Clayton Environmental Consultants, Inc., Pleasanton, CA  
CTB – Curtis & Tompkins, Berkeley, CA  
DCHM – Data Chem, Salt Lake City, UT  
ECEN – Ecology and Environment, Inc., Lancaster, NY  
EMXT – EMAX Labs., Inc., Torrance, CA  
ENSS – Enseco-California Analytical Lab, W. Sacramento, CA  
ESEG – Environmental Science & Engineering, Inc.,  
FPAO – Field-Portable Analytical, Inc., Orangevale, CA  
GORE – W.L. Gore & Associates, Inc., Elkton, MD  
MCSP – Microseeps, Pittsburgh, PA  
ML – Montgomery Labs, Pasadena, CA  
MRI – Midwest Research Institute (MRI), Kansas City, MO  
MSSL – Mountain States Analytical, Salt Lake City, UT  
MWM – Montgomery Watson, Madison, WI  
NETS – NET Pacific, Inc., Santa Rosa, CA  
QES – Quanterra Environmental Services, Santa Ana, CA  
QESS – Quanterra Environmental Services, West Sacramento, CA  
RECA – Recra Environmental, Inc. Amherst, NY  
RFW – Roy F. Weston, Inc.  
RFGW – Weston-Gulf Coast Labs, University Park, IL  
RFWL – Roy F. Weston, Inc., Lionville Lab

RFWS – Roy F. Weston, Inc., Stockton Lab  
SVLS – Severn Trent Labs., West Sacramento, CA  
SVTM – Severn Trent EnviroTest, Monroe, CT  
TGGS – Trans Global Environmental Geochemistry, Sacramento, CA  
UBTL – Utah Biomedical Testing Lab  
USSP – U.S. Army Corps of Engineers, South Pacific Lab, S

## Contractors

GMSA – Geomatrix Consultants, Inc., Santa Ana Heights, CA  
ITSW – Innovative Technical Solutions, Inc., Walnut Creek, CA  
JMCW – James M. Montgomery, Consulting Engineers, Inc., W  
KLNf – J.H. Kleinfelder & Associates  
KLNS – Kleinfelder, Inc., Sacramento, CA  
KLNU – Kleinfelder, Inc., Salt Lake City, UT  
MEI – Metcalf & Eddy  
MWSL – Montgomery Watson, Salt Lake City, UT  
MWWC – Montgomery Watson, Walnut Creek, CA  
NA – Not Applicable  
NWEI – North Wind Environmental, Inc., Idaho Falls, ID  
PARS – Parsons Engineering Science, Salt Lake City  
PSGS – Professional Services Group, Salt Lake, UT  
SCAS – SCA Environmental, San Francisco, CA  
USAD – U.S. Army Corps of Engineers, Sacramento, District, CA  
WWC – Woodward-Clyde Consultants, Oakland, CA



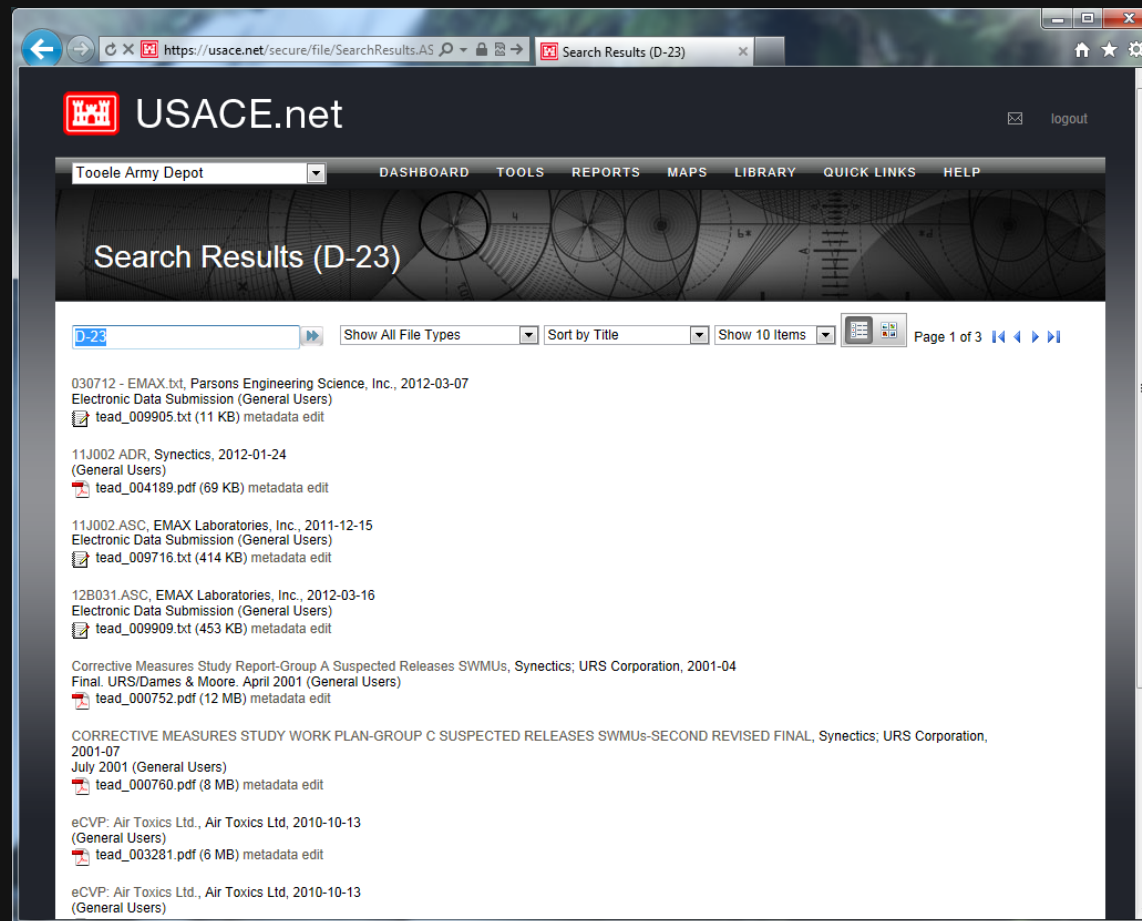
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# Documentation Resource

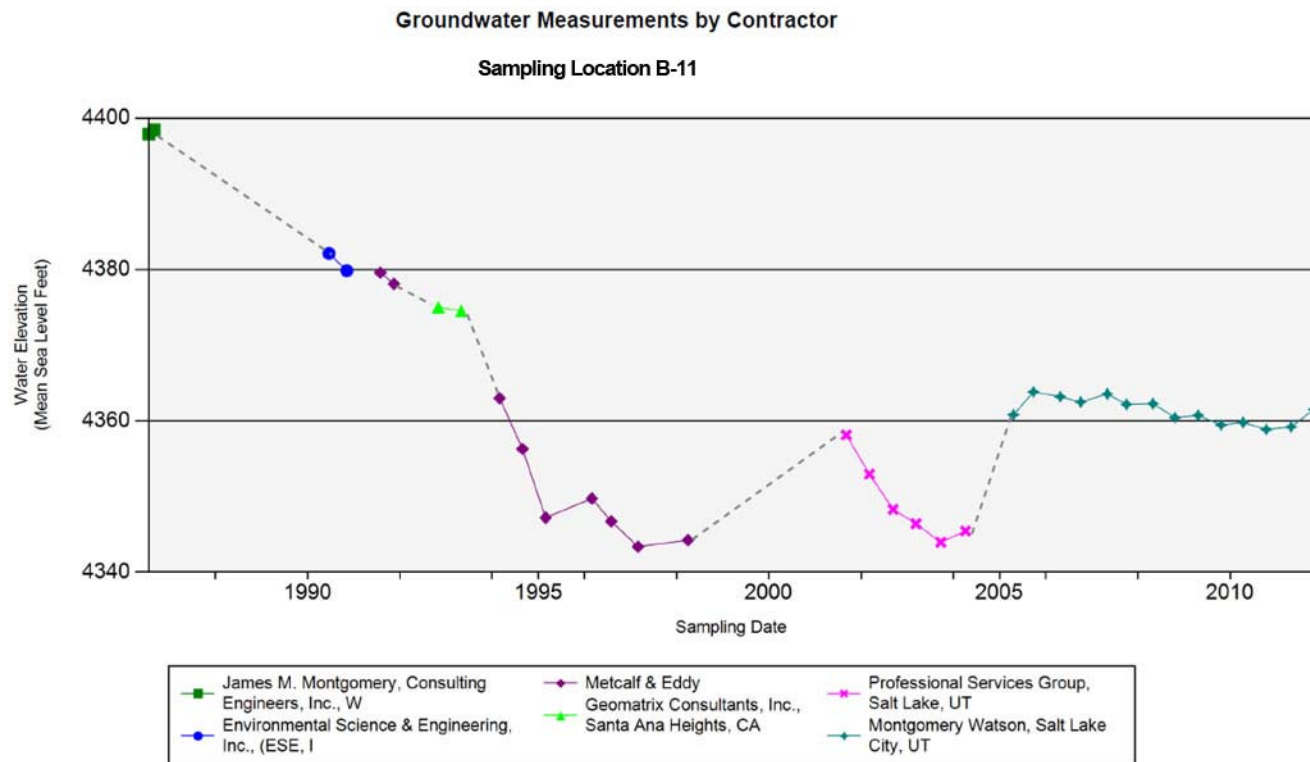


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# Continuity



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# Ongoing Uses of the Database

- Real time data loading and screening used by laboratories and field personnel
- Automated Data Review
- Generate automated tables and charts
- Contractor support
- Automated generation of ERIS deliverables
- Groundwater modelers export data as needed
- Installation staff and regulators access information in real time
- Accessed regularly by various government research groups



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# Tooele Accepted into ETSCP in 2012

The Environmental Security Technology Certification Program (ESTCP) is DoD's environmental technology demonstration and validation program.

Students researching projects for acceptance into this program were able to access historical data through the Tooele web portal.



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“I consider TEAD’s selection for the SERDP project as directly related to TEAD’s ability to provide quality historical and current data to support the SERDP project goals. The study is expected to generate new lines of evidence that will bolster the case for achieving acceptance of a Monitored Natural Attenuation remedy for the Tooele groundwater plumes. This provides a win-win scenario for both TEAD and the SERDP project.”

--Pamela Wehrmann  
USACE Sacramento District Chemist



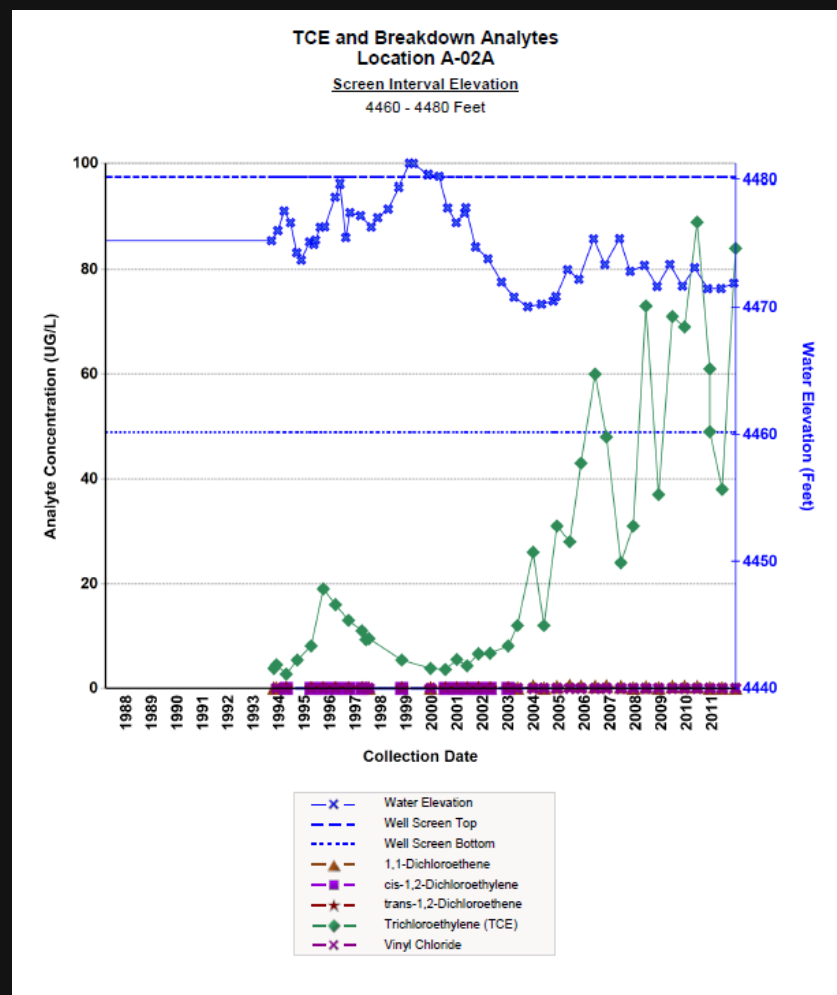
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# TCE Breakdown Chart



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# Chemistry Report

## SWMU 10 11 Data: Location A-02

Facility: Former Nebraska Ordnance Plant, Mead, Nebraska

Table 2-TNT Washout Pond Detections

	Location Field Date Matrix Sample Type Units	A-02 1/26/1986 Water Normal UG/L	A-02 10/1/1986 Water Normal MG/L	A-02 10/1/1986 Water Normal UG/L	A-02 10/6/1986 Water Normal MG/L	A-02 10/6/1986 Water Normal UG/L
<b>Volatile Organic Compounds by Capillary GC/MS</b>	1,2-Dichloroethane	-	-	-	-	0.20 J
	Chloroform	-	-	0.20	-	0.20 J
	Methyl Ethyl Ketone (2-Butanone)	4.6	-	-	-	-
	Methylene Chloride	7.2	-	-	-	-
	Toluene	0.50	-	-	-	0.70 J
	trans-1,3-Dichloropropene	-	-	0.10	-	-
	Trichloroethylene (TCE)	8.8	-	7.3	-	5.3
	Benzene	-	-	0.50	-	1.4
<b>Trace Metals by ICP</b>	Arsenic	-	0.0020 J	-	0.0030 J	-
	Barium	-	0.029	-	0.030	-
	Calcium	-	-	-	-	-
	Chromium, Total	-	0.19	-	0.16	-
	Copper	-	-	-	0.0090 J	-
	Iron	-	0.76	-	0.55	-
	Magnesium	-	-	-	-	-
	Manganese	-	0.026	-	-	-
	Mercury	-	-	-	-	0.40 J
	Nickel	-	0.095	-	0.11	-
	Potassium	-	-	-	-	-

### Data Qualifier Definitions

- J The analyte was positively identified, but the associated numerical value is estimated and represents the approximate concentration of the analyte in the sample.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- Indicates Contaminants of Concern (COCs)



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# Saving Time and Money

- The USACE saved money by funding only one data management effort
- Resampling and reanalysis costs were decreased by increasing data quality and traceability
- Control of data and real time collection into a single repository saved time in researching and obtaining contractor data



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“...Another key benefit of having the database and opening it up to all stakeholders (Army, State of Utah, EPA, contractors) is that it builds in a level of trust between the parties which we've found has been very valuable to the project.”

--Maryellen Mackenzie, PG

USACE Environmental Geology Section Chief



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# Collaboration and Portability

The USACE and other Department of Defense agencies and contractors have used the innovations developed at TEAD on many other environmental projects. Additional functionality added by these projects has been shared back to the TEAD portal, demonstrating cost savings and interagency collaboration.



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Tooee Army Depot

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## Tooee Army Depot

Recent Photos

Environmental Data

EMI	7,529
GWD	284,554
LDI	2,231
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WMI	0

Approved Documents

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Final Reports	143
Decision Documents	14
Laboratory Reports	355
Field Logs	305
Data Review Reports	277
Quality Assurance	67
Miscellaneous	81
Public Meetings	5
System Management	5

Document Status

Loaded	340
Certified	8
Approved	1,414

Points of Contact

- Heather Stamps (Admin)
- Evin McKinney (Tech)

Active Users

- Betty Van Pelt
- Carl Cole
- Evin McKinney
- Hang Bui
- John Torgensen
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- Maryellen Mackenzie
- Neda Akhondan
- Pam Wehrmann
- Richard Jirik
- Suzan Hughes
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Project Calendar

March 2012

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Communications Log

Evin McKinney wrote:  
SELECT \* FROM  
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Kenette Pimentel wrote:  
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CMI? I am having vxl issues with our  
EDD. SWMU 58 Work Plan, Dec. 2003



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[→](#)
<https://synectics.net/secure/homepage/dashk>
[Former Nebraska Ordnance...](#)

logout

[Former Nebraska Ordnance Plant, ▾](#)
[DASHBOARD](#)
[TOOLS](#)
[REPORTS](#)
[MAPS](#)
[LIBRARY](#)
[QUICK LINKS](#)
[HELP](#)

## Former Nebraska Ordnance Plant

Recent Photos

Environmental Data

EMI	1,719
GWD	8,206
LDI	4,086
LTD	0
RESULT	796,021
SAMPLE	23,493
SLX	3,293
TEST	47,093
UXODISC	0
WCI	573
WINT	1,646
WMI	0

Approved Documents

Administrative Record	161
Imagery	15
Planning Documents	141
Public Meetings	119
Operable Unit 1 - All	25
Operable Unit 2 - Pre 2005	184
Operable Unit 2 - 2005	331
Operable Unit 2 - 2006	85
Operable Unit 2 - 2007	41
Operable Unit 2 - 2008	72
Operable Unit 2 - 2009	331
Operable Unit 2 - 2010	491
Operable Unit 2 - 2011	216
Operable Unit 2 - 2012	23
Operable Unit 3 - Pre 2010	41
Operable Unit 3 - 2010	4
Operable Unit 3 - 2011	1

Document Status

Loaded	1,473
Certified	37
Approved	3,699

Points of Contact

- John Ryder (Admin)
- Suzan Hughes (Tech)

Active Users

Active Users

- David Barker
- Evin McKinney
- Huison Chang
- James Madison
- John Ryder
- Karen Chirgwin
- Philip Edwards
- Susan Carter
- Suzan Hughes
- Ting Li

InActive Users

Project Calendar

March 2012

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Communications Log

Suzan Hughes wrote:  
Hey there - I am working with Huisson on sample qualification. I changed an R flag to UJ, which worked, but I need to put it back, and it is telling me that an ND has to be UJ or U. Can you fix this? Thanks!

Evin McKinney wrote:  
SELECT \* FROM [user\_CHEM\_Enh] where locid in('mw-119a','mw-119b')

Evin McKinney wrote:  
SELECT \* FROM [user\_CHEM\_Enh] where locid like 'mw-119%'



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ITSI Innovative Technical Solutions, Inc. A Gilbane Company

AMCO Chemical Superfund Site

DASHBOARD TOOLS REPORTS MAPS LIBRARY QUICK LINKS HELP

## AMCO Chemical Superfund Site

Recent Photos

Environmental Data

EMI	569
GWD	457
LDI	571
LTD	0
RESULT	282,039
SAMPLE	12,134
SLX	353
TEST	19,318
UXODISC	0
WCI	44
WINT	12
WMI	0

Approved Documents

Administrative Record	0
Planning Documents	7
Boring Logs	88
Well Construction Diagrams	13
Field Documents	144
Sample Receipt Documents	93
Laboratory Reports	161
Data Review Reports	50
Decision Documents	0
Electronic Data	295
Miscellaneous	9

Document Status

Loaded	13
Certified	404
Approved	860

Points of Contact

- Florante Andaya (Admin)
- Wing Tse (Tech)

Active Users

- Claudia Osorio
- Denise Barnette
- Evin McKinney
- James Parker
- Kristen Carlyon
- Kimberly Tom
- Laura Deck
- Leticia Sangalang
- Philip Edwards
- Sue Bell
- Suzan Hughes
- Tracy Young

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Communications Log



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Massachusetts Military Reservation  
**MMR-EDMS.org**

MMR IAGWSP

DASHBOARD TOOLS REPORTS MAPS LIBRARY QUICK LINKS HELP

MMR IAGWSP

Recent Photos

Environmental Data

EMI	131,474
GWD	26,464
LDI	23,898
LTD	14,936
RESULT	3,139,659
SAMPLE	80,760
SLX	16,201
TEST	200,922
UXODISC	10,073
WCI	2,688
WINT	4,590
WMI	152

Approved Documents

Document Repository	5,181
Archive Search Report	168
Boring Logs	111
Well Construction	881
Laboratory Reports	2,978
Data Review Reports	1,303
GIS Data	997
Geophysical Data	42
Electronic Data	3,018
System Management	935
Program Documents	9
Treatment Systems	60
Progress Reports	145
UXO Incidents	3,234
Miscellaneous	21
Orphaned PDFs	2,071

Document Status

Loaded	141
Certified	72
Approved	21,387

Points of Contact

- Angelika Lugo (Admin)
- Leticia Sangalang (Tech)

Active Users

- Aimee Comeau
- Angelika Lugo
- David Hill
- Evin McKinney
- James Madison
- Laurie Ekes
- Marcia Goulet
- Marie Wojtas
- Mark Applebee
- Michelle Morris
- Samir Naguib
- Suzan Hughes

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Communications Log

Suzan Hughes wrote:  
The ADR report changes will be in place today or tomorrow.

Suzan Hughes wrote:  
I'll let Aimee know about the new folders. Evin is working on the SLX from Matt.

Suzan Hughes wrote:  
Update SLX based on Matt's email of October 5

Mary Newton Lima wrote:  
I'm not talking about anything - what are you talking about?

Charles Campbell wrote:



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Evin McKinney wrote:  
SELECT \* FROM  
LOOKUP.dbo.tlkpASTMCODE

Kenette Pimentel wrote:  
Okay, thank you.

Evin McKinney wrote:  
That is correct, but we need to add  
additional methods.

Kenette Pimentel wrote:  
Hi Evin, do you know the project  
document for Parson's TEAD SWMU-58  
CMI? I am having vvl issues with our  
EDD. SWMU 58 Work Plan, Dec. 2003



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# Questions?

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